

From: Fran Garland  
Sent: Wednesday, September 24, 2003 6:37 PM  
To: Dabbs, Paul  
Subject: CCWD comments on Delta Regional assessment

Hi Paul--

I had some of our water resources experts look at this and I've incorporated their recommended changes in the 9-16 draft. I know DWR wants comments from the caucuses from now on, but since half our District is in the Delta region, I felt we should go ahead and send our individual agency comments on this first draft.

<<CCWD comments on Delta assessment.doc>>

Thanks,

Fran Garland  
Principal Planner  
Contra Costa Water District

# The Delta

## Setting

The Sacramento – San Joaquin Delta is the tidally influenced estuary surrounding the confluence of the Sacramento and San Joaquin Rivers. The Delta, about 740,000 acres, is comprised roughly of lowlands (lands approximately at or below the 5-foot contour) and uplands (lands above the 5-foot contour that are served water by lowland Delta channels). While the Delta occupies portions of the Sacramento and San Joaquin hydrologic regions, the Delta is described here as one area because of its common characteristics and its role in the State's water system.

The Delta received its first official boundary in 1959 with the passage of the Delta Protection Act. California Water Code Section 12220 contains the legal description of the Delta.

Unlike a typical delta that forms where a river discharges to the ocean, the Sacramento – San Joaquin Delta is located east of the Coast Range, more than 40 miles inland from the Golden Gate. Tidal flows at the western edge of the Delta can exceed 300,000 cfs and gradually diminish to the east. Two high tides and two low tides occur each day.

Settlers first constructed levees along the numerous channels during the late 1800s, initially to turn state-owned "swamp and overflow lands" into privately-owned agricultural land. Over time, levee heights were raised to maintain protection as both settling of levees and shallow subsidence of Delta island soils occurred (oxidation, peat fires, and wind erosion have lowered interior island elevations over time). Many hundreds of miles of levees now ring the 70 islands or tracts that sit among the maze of interconnected waterways. The interiors of some islands in the western Delta are now more than 20 feet below sea level. Water now presses against the outside of the levees at all times, posing a constant threat of flooding the Delta islands.

The **Delta Protection Commission** was created by State Legislation in 1992 with the goal of developing regional policies for the Delta to protect and enhance the existing land uses in the 500,000 acre Primary Zone: agriculture, wildlife habitat and recreation. In 2000, the Commission was made a permanent State agency.

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The vast majority of the Delta land is agricultural (about 520,000 acres), considered among the most highly productive land in the world. Principal crops include grain, corn, fruit, vegetables, safflower, and nuts. Water supply from about 1800 diversions from Delta water channels totals about 1 million acre-feet annually. Drainage water from the islands is returned to the channels. Rapid growth is occurring in urban

The **California Bay-Delta Authority** became a state agency in January 2003. The authority will oversee implementation of the Bay-Delta Program to improve water supplies in California and the health of the San Francisco Bay – Sacramento / San Joaquin River Delta. [may want to link this back to CALFED]

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- 1 areas in, and surrounding, the Delta - West Sacramento, Sacramento, Elk Grove,
- 2 Lathrop, Stockton, Tracy, Brentwood, Oakley, Discovery Bay, Mountain House,
- 3 Antioch, Pittsburg, and Rio Vista.

**\*\*\*include a map (uplands and lowlands) from DWR Delta Atlas \*\*\***

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The Delta is the hub of the CVP and SWP water system; about two-thirds of Californians and over 7 million acres of irrigated agricultural land obtain at least a portion of their water from the Delta. [The Delta is a drinking water source for over 22 million Californians.](#) The Delta is also an important ecosystem for resident species and anadromous fish moving into and out of the upstream watersheds and provides unique recreational opportunities.

Requirements of the State Water Resource Control Board specify release of upstream flows [and curtailment of export pumping](#) to maintain Delta water quality and outflow requirements to the San Francisco Bay. [Suggest adding info on important water quality regulations/decisions here.](#)

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### **“State of the Region”**

[Suggest adding an introductory paragraph and then using subheadings to set the major issues apart—Water Levels, Water Quality and Ecosystem.](#)

[Water Levels.](#) Since the Delta water users divert directly out of the adjacent channels, they normally have immediate access to water, but water quality and channel water levels are influenced by operations of the SWP and CVP, especially from water diversions at the south Delta export pumps. Lower water levels in the south Delta make it difficult for existing local irrigation diversions to access the water. The flow of water to the export pumps can also draw higher salinity into the [south Delta](#) from the [western Delta](#).

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[Water Quality.](#) The Delta is a source of drinking water for over 22 million Californians. Using the Delta as a drinking water source presents many challenges. [Salinity \(from saltwater intrusion and from agricultural drainage\), organic carbon, and pathogens are among the major constituents of concern for drinking water agencies. Treatment of organic carbon and bromide can create disinfection byproducts that may be harmful to human health. There are many threats to water quality facing the Delta. Increasing population leads to increasing wastewater discharges and increasing recreational use. In addition, some of the proposed CALFED projects for water supply and ecosystem restoration can contribute to water quality degradation. The CALFED Drinking Water Quality Program is currently evaluating projects to improve Delta water quality, including relocating agricultural drains and reclaiming flooded islands. CALFED and several other agencies are also supporting a Regional Board effort to develop a drinking water policy for the Central Valley Region that will protect the Delta as a drinking water source into the future.](#)

[Water quality is also a concern for agricultural and environmental interests. Good water quality is critical to the state’s agricultural sector and to the habitat needed in the Bay-Delta to support a diversity of fish and wildlife populations. The entire Delta is on the SWRCB’s 303\(d\) list for mercury \(in fish tissue\) and a variety of pesticides and chlorpyrifos. South Delta agricultural diverters are faced with high levels of salinity. Low](#)

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dissolved oxygen, caused by nutrients, low flows, and high temperatures plague the Stockton Deep Water Ship channel, causing harm to aquatic life and perhaps posing a barrier to fall-run salmon migrating upstream to spawn. Dredging to maintain deepwater ports at Stockton and Sacramento, and to maintain the extensive Delta levee system may resuspend contaminants in sediment that are toxic to aquatic life. Vessel discharges of wastes may contribute loadings of pathogens and other pollutants.

Ecosystem. Over the past century, the health of the Delta ecosystem has declined in response to a loss of habitat for both aquatic and terrestrial biota. Remaining habitat quality has also declined due to several factors including diversion of water, toxics, and exotic species. Exotic species have invaded and changed the Bay-Delta more than other aquatic ecosystem in North America. The Delta no longer provides the broad diversity of habitats nor the habitat quality necessary to maintain ecological functions and support healthy populations and communities of native plants and animals. Conversion of agricultural land to other uses to accommodate ecosystem improvements or other actions (storage and conveyance) of the California Bay-Delta Authority is a major concern to Delta agricultural interests.

During the past several decades, as water diversions and recognition of environmental water needs have increased, conflicts have also increased. In response to declining fish and wildlife populations, water flow and timing requirements have been established for certain fish and wildlife species. Over the past decade, a number of protective actions including the Central Valley Project Improvement Act and the Delta Accord have reduced the CVP and SWP ability to meet the water demand both in quantity and timing for exports from the Delta.

Suggest replacing with the WQ paragraphs above.

Levee Stability. Levee construction on the peat soils makes Delta levees vulnerable to failure, especially during earthquakes or floods. Delta island farmland, residences, wildlife habitat, and critical infrastructure would be flooded as a result of a levee failure. Few levees have failed from winter flood conditions since 1986, when the State implemented a new levee maintenance assistance program.

Summer or fall levee failures can also cause indirect impacts with salty water moving up into the Delta, as an island is inundated under non-flood conditions. The increased salinity in the Delta would be of particular concern in a low water year, when less freshwater would be available to flush out the salt water (such as occurred when the Brannan Andrus Island levee failed in 1972). Long-term flooding of specific Delta islands can have an effect on water quality by changing the rate and area of the mixing zone. A long interruption of water supply for in-Delta and export use by both urban and agricultural users could result, until the salt water could be flushed from the Delta.

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Deleted: Delta water quality is a major concern, both in the Delta itself and in export regions. The Delta is a source of drinking water for 22 million Californians and is critical to the state's agricultural sector. In addition, good water quality is required to maintain and restore the habitat needed in the Bay-Delta system to supports a diversity of fish and wildlife populations. The entire Delta is on the SWRCB's 303(d) list for mercury (in fish tissue) and a variety of pesticides, including DDT. In particular, the Delta is contaminated by diazinon and chlorpyrifos, primarily from storm runoff from orchards, irrigation return flows in summer, and urban runoff in general. South Delta agricultural diversers are faced with high levels of salinity. Municipal exporters are also concerned about salinity, as well as pathogens and organic carbon, all of which are problematic for producing domestic water that is safe and acceptable to consumers. Low dissolved oxygen, caused by nutrients, low flows, and high temperatures, plague the Stockton Deep Water Ship Channel, causing harm to aquatic life and perhaps posing a barrier to fall-run salmon migrating upstream to spawn. Dredging to maintain the deepwater ports at Stockton and Sacramento, and to maintain the extensive Delta levee system as well, may resuspend contaminants in sediment that are toxic to aquatic life. The Delta has localized hot spots of PCBs, such as the Port of Stockton and Smith Canal. Vessel discharges of wastes may contribute loadings of pathogens and other pollutants to the Delta.

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## Looking to the Future

A wide variety of studies and project implementations are underway to improve levee, water quality, ecosystem, and water supply reliability to benefit the Delta and broader California. [Suggest bringing in some of the goals from the CALFED Record of Decision such as continuously improving Delta water quality.](#)

The Department of Water Resources and US Bureau of Reclamation are responsible for implementing South Delta Improvements Program (SDIP) as part of the Bay-Delta Program. Actions contemplated as part of the SDIP include providing for more reliable long-term export capability by the state and federal water projects, protection of local diversions, and reducing impacts on San Joaquin River salmon. Specifically, actions in the South Delta Improvements Program include consideration of placement of a fish barrier at the head of Old River, up to three hydraulic barriers in south Delta channels, dredging and extension of some agricultural diversions, and increasing diversion capability of Clifton Court Forebay to 8,500 cubic feet per second. For over a decade, temporary barriers have been installed annually for many years to help water circulation and raise water levels for agricultural diversions.

The North Delta Improvement Program (NDIP) will benefit flood control and the ecosystem; "The purpose of the NDIP is to implement flood control improvements in a manner that benefits aquatic and terrestrial habitats, species, and ecological processes."

[DWR and Reclamation \[?\] are](#) investigating the In-Delta Storage Project as part of the Bay-Delta Plan. Two Delta islands would be modified to store a total of

### Ongoing Planning Efforts

- American Farmland Trust study of Delta agriculture.
- DFG Ecosystem Restoration Plan for the Delta.
- SAFCA study of new flood control projects for Sac and West Sac in Yolo Bypass.
- Yolo Flyway Center --proposed public education facility adjacent to Yolo Bypass.
- Delta Science Center--proposed public education facility at Big Break Regional Shoreline (East Bay Regional Park District).
- Rio Vista--proposed public education and recreation facility at former military property recently transferred to City of Rio Vista.
- New Research Facility proposed by CALFED Science Consortium at former military property recently transferred to City of Rio Vista.
- Delta Protection Commission proposed study of Delta recreation
- California Bay-Delta Authority, various investigations for implementation of the Bay-Delta Plan

### Sources of Information

- Water Quality Control Plan, Regional Water Quality Control Board
- Watershed Management Initiative Chapter, Regional Water Quality Control Board
- 2002 California 305(b) Report on Water Quality, State Water Resources Control Board
- Bulletin 118 (Draft), California's Groundwater, Update 2003, Department of Water Resources
- Nonpoint Source Program Strategy and Implementation Plan, 1998-2013, State Water Resources Control Board, California Coastal Commission, January 2000
- Strategic Plan, State Water Resources Control Board, Regional Water Quality Control Boards, November 15, 2001
- Delta Protection Commission website <http://www.delta.ca.gov/>
- Bay Delta Authority website <http://calwater.ca.gov/>
- Delta Atlas, State Department of Water Resources, July 1995
- Layperson's Guide to the Delta, Water Education Foundation, 2000

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about 217,000 acre-feet for a wide variety of potential [uses](#), including exports  
and Delta outflow.

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Many other potential actions taken by the California Bay-Delta Authority and  
others in the upstream Sacramento River and San Joaquin River hydrologic  
regions can benefit the Delta, especially its water quality and flood flows. These  
may include such actions as improvements for conveyance, storage, levee  
[stability](#), water quality, water use efficiency, and watersheds.

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